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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

THE VALUE OF FALSE PHILOSOPHIES

PHILOSOPHY may be bad because it is poor; again, it may be bad because it is false. Poor and feeble philosophy, like sweet flowers in decay, is ill-smelling stuff; we shall leave it alone. But there are false philosophies that are not poor and weak. Unless contradictory statements can both be true, this is a category which embraces close upon half the chief systems, or half the theses of all the chief systems. This fact has appeared, to many a critic of philosophy in general, a confession of the futility of the whole endeavor; and to many a well-wisher, a cause for lament over wasted effort and great minds gone astray.

There are those who demur and say there is no difficulty in the matter. Philosophy, they assert, is not to be judged by the standards of science. It is to be judged by the standards of art or of religion. It is to be judged by standards of power and inspiration. Its truth is one and identical with its potential influence over human life. Philosophy is a human attitude, and not a theory. But judged literally by such a standard as this, the truest because the most dynamic philosophy was the Mohammedan's blind trust in the inscrutable will of Allah, as being the one and only explanation for all things in heaven and earth. From the straits of Gibraltar to the straits of Singapore, from Zanzibar and the Niger to the steppes of Turkestan, weak in numbers but great in infatuation, the irresistible armies of that faith went sweeping abroad. Is it not true that the great dynamic ideas are generally false, with at least the falseness of onesidedness? For they must never be tainted by doubt; they must not be enfeebled by critical analysis. The power and inspiration that is unaccompanied by a more homely sort of trueness, is it not a dangerous thing, having in it the seeds of persecution and fanaticism? And as for philosophy, are not truth to the facts of this world, critical aloofness, adequacy to all the manifold phases of all the multitude of real things, its first ineludible requirements?

Nevertheless there does seem to be something about a great system of philosophy which, even though we confidently believe it not to be true, does make it, somehow or other, too much worth while to

allow us to reject it as foolishness and wasted energy. It is not merely that it is a great feat of the imagination. That, in full measure, it may indeed be, and receive admiration accordingly, as we might admire Dante's vision without believing his astronomy. But considered exclusively from this standpoint, even the great systems are less satisfying than the works of minor poets and second-rate novelists. A philosophy is at once so abstracted and so pretentious a thing, that seldom does it let you forget how pertinaciously it intends to be true of the world of fact. Explicitly it insists that this is really so, and that is really so. You can not luxuriate in its fairy-land, or forget that its dreams are dreams. You are forced, at every step, to compare it with what you believe to be actual, and though your belief may be itself mistaken, it certainly precludes all artistic illusion.

So philosophy is like science. It does make a claim to scientific veracity. A philosophical system lays down propositions about the make and texture of the world, propositions that run the risk of being wrong. Hence ingenuity has been employed in plenty to make discrimination as to where science leaves off and philosophy begins. We are even told that the distinction is this: whenever a domain of knowledge reaches definiteness and exactness, it then sets up as a distinct science, while philosophy comprises the ever-diminishing residue of the muddled and confused. This would be an excellent way to annihilate the value of philosophy altogether. Yet the future sum of the sciences does promise to be conterminous with the sum of things. Once there was a time when philosophy was held to be the study of mind, the sciences studied matter; but there have now arisen the mental, the psychological sciences. Even yet we are told that philosophy is conversant with values, and science with facts; but there are already the beginnings of increasingly important sciences of values. Before long, or so it would seem, science will have appropriated to itself all the sweets of knowledge, and philosophy can enjoy them only vicariously. Philosophy is left in the situation of the little girl whose brother would not share any of his candy with her, but magnanimously offered to let her kiss him while his mouth was sticky.

Thus it stands. On the one hand, philosophy can not rival art and literature in the domains of fiction. Its fictions are dead and theirs are alive; its imaginings are skeletons, but theirs have the warmth of flesh and blood. On the other hand, philosophy would seek an abode in the districts of fact. But the serried phalanx of the sciences bars the way, and prevents approach. This is their country; no room has been left for a stranger here. What then remains for philosophy?

There is one noteworthy answer recently advanced or readvanced. Let philosophy abate her old pretensions and narrow her ambitions.

Let her become one of the sciences, the science which is the most abstract. Then as a science, with the methods of science and the impersonality of scientific inquiry, she may hope for the same success, the same constancy of progress which other sciences have enjoyed. Such is the proposal of Mr. Bertrand Russell.

That there is a possible science such as Mr. Russell looks forward to, a science of fundamental categories, of generality as such, a science of logic far more ultimate and extensive than the ordinary logic of *Barbara Celarent*—these theses we are not anxious to dispute. Nor do we doubt that decisions about matters of exceeding abstraction and generality, far remote from ordinary problems, may have astonishingly wide and important consequences. A breath of air in the Andes may send a snowflake to one side or another of a point of rock, and thereby determine whether, through glacier and mountain torrent and river, that drop of water shall reach finally the Atlantic or the Pacific. And even so, in these remote matters of abstruse inquiry, one turn or another may be taken without noticing there is an alternative, and from that point on, the dialectic gathers force and mass, everything seems swept on in one direction with inevitable convincingness, until the philosopher believes his system admits of no rival and is founded on eternal categorical necessity. Such, for example, is the really marvelous dialectic of Francis Herbert Bradley. White moves so and so, then black moves, then white again, and behold! the decision of that philosophic chess game is already recorded in the book of fate. There is an innocent-looking suggestion put forward; it seems so plausible and so little worthy of dispute that you acquiesce in it; and you are caught in the net, caught so cleverly that you imagine you are still free, and moving of your own accord to those resultant conclusions that arise so naturally. You look upon the inquirers who travel other roads as being necessarily less clever than yourself. They have doubtless not thought the question out. Some day, if they are keen enough, keen as you have been, they too will see the light and come to your conclusions. You pity them. Your own faith is built upon a rock.—Yes, it is true that these apparently remote questions are significant. Granted that we want our philosophy to be reasoned and reasonable, these subtle matters are fully as important as Mr. Russell maintains. A training in such matters, an intensive study of them, is as necessary for the philosopher as mathematics for the physical chemist. All this we may grant Mr. Russell.

But philosophy? Shall we make philosophy into a science? Reduce our philosophy without remainder even to this most metaphysical and ultimate of sciences? Consider. Does not the philosophy that abates one jot of her old pretensions abdicate her throne altogether? Is it not the boast and glory of philosophy that she takes

the universe for her province, and admits no bounds to her empire; that her thoughts go out to the ends of the world, and her rule and compass span all the infinities? "But," you say, "limitation is requisite for success; too bold an ambition will overreach itself and philosophy will fail." And is it, then, such a lamentable thing to fail? Are there not tasks wherein to try, though you try and fail, is a greater distinction than all the smug successes you could win in lesser ventures? It is better, we say to Mr. Russell, that philosophy should remain philosophy, a splendid failure, than that it should renounce its high calling to win a more commonplace success. If philosophers to-day are wary of system-building and take conceit in the modesty of their aims, it is because they lack courage and lack power. He who is too afraid of being in the wrong stands an excellent chance of never being in the right either. Better a downright false philosophy, contrary to obvious fact, than a philosophy that is a nullity. Intellectual modesty may be a personal virtue in a philosopher, but philosophy can not itself be modest and remain a philosophy. That philosophy should constantly strive to emulate the precision and impersonality and justice in weighing the evidence which distinguish science, is, we grant and proclaim, a worthy and necessary ideal. A philosopher should never for a moment forget that his most cherished theories are, once and for all, theories; that he does not know everything; and that the feeling of absolute assurance is excellent evidence of failure to see the other side which every philosophical question possesses; but, all this notwithstanding, he, as a philosopher, is still bound to have opinions and plenty of them, and the courage of his opinions; and when he stops being bold, stops following his opinions to their uttermost extent, he ceases to be a philosopher, and becomes not a cautious scientist, but a nonentity. Philosophy is that science which abstracts from nothing, that science to which nothing is alien and for which nothing is negligible, and therefore is philosophy not a science at all. Philosophy is philosophy.

But what then is the sort of achievement to which philosophy looks forward? There are at least two types of aims which have been mixed up together under the one title of philosophy, and they need to be discriminated from one another, as well as from science and art. We might call them theoretical and practical philosophy, yet the terms mean little until explained.

Theoretical philosophy is a sort of knowledge. But the characteristic trait of it is that, while scientific knowledge is accomplished when facts are known, known as they are, philosophical knowledge is then no more than ready to begin. The facts now need to be interpreted and understood. This interpretation is not an evaluation of good and bad, and it is not necessarily a seeking behind and beneath the facts

for some reason and ground that explains why things are as they are. It may well be that the facts in question are simply brute data, without reason and without worth. But the interpretation which the philosopher gives of those facts consists always and essentially in a notable widening of the purview. It is a widening, to use the terminology of the old association psychology, by both contiguity and similarity. Where do these facts stand in a larger context? How do they compare with other facts like them or differing from them. The mere widening by contiguity might be done by science, though never so fully done. But the widening by similarity and contrast is much more peculiarly philosophical, in so far as it asks for the instituting of comparisons, not merely with what is, but with what might be; and it opens to the philosopher not only the realm of the actual, but the limitless stretches of the ideal and possible; introduces him to things even forever impossible in this world of ours, yet not impossible in themselves. Now there is no philosophic value in castles in the air, whatever may be their artistic beauty. The only value from the intellectual study of the ideal and the possible is when it throws a new light of contrast or likeness upon the actual, reveals what is contingent in the actual and so could be otherwise, reveals the facts of the strange arbitrariness of many an aspect of this world of ours, until the common things of earth take on an arresting wonder and mystery. And such comparison reveals likewise similarities and analogies among things the most diverse, threads of likeness or relation that knit together things far remote.

All this is an intellectual inquiry. But it is an intellectual inquiry which has no peculiar subject-matter. Philosophy can begin anywhere; the characteristic of it is only that it never rests where it began. It is never satisfied with knowledge of given fact, however well certified to. It looks out beyond. And it is an intellectual inquiry the truth of whose results, though very much the same as the truth of science in being some correspondence of knowledge and things, is subject to tests which are not merely any pragmatic ones of success or of leading into touch with facts. If there is successful leading involved, it is ever a success plus an interpretation of that success. This point is not altogether peculiar to philosophical knowledge, but it assumes a special importance there. No comparison, for instance, can ever be tested by merely being led to the things compared, and especially so when one of those things compared does not exist at all. Yet every proposition we utter has its contradictory, as is a commonplace of logic, a commonplace with very uncommonplace implications. For we can never judge without asserting that something is this way and not otherwise, thereby comparing the way it is with the way it might be, but nevertheless is not. And only the

simplicity, or apparent simplicity, of this comparison leads us to ignore its presence, as so regularly we do. The only test of a comparison is another comparison; you get more data and you compare again. The things are doubtless given as like or different, but they do not compare themselves. There is, therefore, no return from a comparison into a flow of non-intellectualized experience, no goal of merely immediate recontact with fact. Therefore it follows that the progress of theoretical philosophy, which thus looks wider and brings in new items to compare, is to be contrasted with any such sort of practical interest in making machines and keeping us fed which is often, justly or unjustly, considered the final aim of scientific knowledge. A philosophical inquiry furnishes means only for more philosophical inquiry; it is a self-perpetuating process. Philosophy leads, of itself, naturally and only to more philosophy. If it is to have value at all, it must be because it is worth while in itself, that it is its own excuse for being. Though it is not for the theoretical philosophy to estimate its own worth to human inquirers, there are those of us who, as practical philosophers of the type to be mentioned in a moment, do come to consider it as a priceless privilege to philosophize so, because it is a great and noble thing to stand apart from the world and yet have knowledge of it; to stand apart, not plunge in, as Bergson bids us do, for only he who is not too much immersed in the game can see all things in their just proportions; to stand apart, the clear-headed critic, and say to the harshest of brute facts, "You are but accidents after all," saying to that which bulks greatest in our foreground, "You are, in the total of the great world-prospect, a very trifling thing."

But there is, and we have just referred to it, another sort of philosophy. Practical philosophy is a matter not so much of knowledge as of will. There may be things valuable which are simply found to be so, about which we can say there is a true view and a false one. It is then a matter for intellectual inquiry to find out which is which. If all value is of this sort, there is little or no ultimate place for what we have here termed practical philosophy, save as an emotional acceptance of given truths about values. But our present situation is not ultimate nor ever will be. And it does indeed seem obviously true of us in our present situation, as well as at least possibly a permanent factor that would survive into even the most ideally ultimate point of view, that sometimes our judgment, "This is good," means really a fiat of ours, "Let this be my good." We have here a sort of thing that never becomes a matter of ordinary truth and falsity. There are those, it is true, who maintain, as does for instance Professor John Dewey, if we do not misinterpret him, that such fiats are really propositions, which are not true as first uttered, but are made true or false

by some one's considering them as if true and living accordingly, so that he thus experimentally finds out whether he is still willing to accept them after trial. But there is no real objectivity gained even so; the result arrived at must again be accepted in a fiat, "Let this be my good." If the primary decree has a proviso, "Let this be my good, because it has these and these characters," the qualifying clause may indeed be refuted by experience, but that is due to its being an ordinary judgment of fact, not created by the willing of it. Such a "passing of judgment" on things, such evaluating of their final worth, is therefore in its essence a fiat of will, to be accepted or rejected, but never in an objective sense true or false.

Now, as a mere matter of fact, some of the most remarkable examples of what has been historically called philosophy have been fiats of this sort. They have been fiats of acceptance or rejection directed towards the universe in general, either towards the whole range of this our actual world, or towards some of those possible or ideal worlds which theoretical philosophy may dispassionately contrast with this of ours. It is generally such a valuation which we have in mind when we speak of a man's philosophy of life; it is what we mean when we speak of a national philosophy. We do not in such cases mean what men and nations think about the world. Doubtless they most often think very little. We mean how they feel about it, and towards what ideals their will is directed. It may also become more explicitly formulated, and embedded in the midst of many judgments of fact. But we have such a philosophy in any case wherein some one declares, "To this world of ours I say yes"; or when he says, "I hate these brutal facts; let us escape to where beauty is uncontaminated and reason free"; or when he says, "Let us accept this world; but looking on it with eyes that cease to desire, let us view it as a show, a spectacle, like the play-world wrought by the magic of some master-artist." Such a one is no longer a philosopher of the theoretical sort. His hopes and fears are in the game. His dreams and his aspirations have become weights in the balances. Truly he must, to deserve the name of philosopher, have still something of the theoretical basis to give him a content which he accepts or rejects; and something of the theoretical attitude also viewing at times his wildest dreams and his deepest aspirations with an eye that is clear-sighted and aloof. But in a practical philosophy there is always something more, a choice, a decision. Whether we call this element philosophy at all, or call it rather religion, or what not, that does not much matter. It seems to overlap one aspect of religion, yet to include other cases hardly to be termed religious. But it does matter a great deal to note that we have this sort of attitude. We have it all of us. The philosopher has it only more marked in degree, more self-conscious, more voluble in ex-

pression, than the layman. Mr. Bertrand Russell's *A Free Man's Worship* is a perfect illustration; though he most among contemporary philosophers has urged upon theoretical philosophy that it be impersonal, "appealing to less mundane hopes and fears." It is a primitive source of inspiration from which comes the driving force that carries the investigator across the more arid and arduous fields of strictly theoretical philosophies and abstract sciences, giving him a faith that that sort of activity is eminently worth while. Once and for all we do, every one of us, explicitly or otherwise, evaluate and pass judgment on the world; we do pass judgment on it as well as seek to know it; we decide where we will to stand, we choose and we reject.

And now our old question: "What, then, is the value of false philosophies?" Let us consider it from the standpoint, first, of theoretical, and then, of practical philosophy. There is, if our opinion be correct, no one theoretical philosophy towards which we are moving; we are moving towards a loosely coordinated group of ways of taking the world. Endless are the possibilities wherewith we many contrast it; inexhaustible by us are the comparisons of diverse aspects which we may set up. And herein is found the present value of any historical philosophy. Theoretically, Spinoza, for instance, may be false, for he meant to tell us about present reality and he told us wrong. We may think that we can disprove great sections of his philosophy, and with more knowledge we could disprove it all. The world is not built like that. But if Spinoza has, as a theoretical philosopher, done his work thoughtfully and well, he has furnished us with a sketch of a world that might be ours. It is a possible world, a plausible world. In the very considering, the very disproving of it, we must necessarily come to understand our world better by the contrast. Had Spinoza started with the explicit aim of creating a fiction, a dream-world, the chances are that he would not have given us anything so profitable to compare with the actual world as he has done; lacking in earnestness, his pen would have traced a caricature, a thing that could not live. The artist, limiting himself to one fragment of the concrete, may deal in fictions for their own sake; but the philosopher's task, set him by the tremendous elaboration of the world of fact, is too heavy a one to permit him to stray far from what he thinks is fact and not fiction. And even the artist seems to gather strength by nearness to the solid ground of actuality; the fancies of even *A Midsummer Night's Dream* are pale and empty, when set alongside the gripping reality of *Hamlet* or *King Lear*. But to us who read philosophy, and wish by its aid to understand our world better—to us, Spinoza, or Plato, or Hegel, or Immanuel Kant, must appear as often substituting fiction for fact. And we might study them, as too many a beginner studies the history

of philosophic thought, as illustrating the aberrations of the human mind. But we also may study them as part of philosophy, a living part to-day, and by no means a mere catalogue of dead and moldering errors. Our world will never be so well understood as by him who understands it in its likeness to, and contrasts with, the worlds of Plato, and Spinoza, and Kant. By their very departure from it, they furnish us a fulcrum outside the world of fact which will give us a leverage on it, a new standing-place whence our eye can more adequately survey it. To understand anything you must know more than it; from beyond and without it you must bring the standards by which it can be measured and judged. Such then is the theoretical value of false philosophy. Such is the reason why, though we read with only an amused curiosity many of the scientific blunders of the Greeks, we nevertheless turn to the philosophical pages of Plato and Aristotle with an eager desire to learn. Science, confining itself rigorously to the narrow limits of its actual subject-matter in hand, leaves its discovered errors hurriedly behind it, because they are to it a source of shame, and an uneasy warning to present science that it, too, is infected with mortality. But the progress of theoretical philosophy is one that can carry all its past with it, the richer by all that has been done; and can draw ever new profit from ancient error, as well as from ancient truth.

The errors of philosophy are not so directly relevant to practical philosophy, because the latter is, as we have seen, not to be judged by standards of truth and falsity. But an evaluation of the world which is to furnish any lasting satisfaction to one who has had his initiation into theoretic philosophy, must found itself on truth. If for instance, some particular evaluation of a world is of a world wherein man is the center of the physical universe, and it declares therefore that suns and stars move in order that he may have days for work and nights for rest,—that evaluation is not of this world we live in. But after all, seldom are the great evaluations much qualified by such conditions of true and false. There are, for example, optimists and pessimists among the mechanical philosophers; there are likewise both optimists and pessimists among the idealists; likewise there are on both sides those whose temperament leads them to declare that the matter of temperament is an impertinence. And philosophies, big and little, have been, and doubtless ever will be, saturated with these evaluations, almost as multifarious as philosophers have been numerous. Such evaluation can be more or less intelligent; it is so, however, only when there has been some sort of choice. Men are doubtless born with one or another philosophic temperament. But man can also be born again in philosophy, when he has appreciated and compared and deliberately chosen. But to do this he must guide his choice by con-

sideration of the great galaxy of previous choices and evaluations; not merely learning what Spinoza or Plato thought, but feeling within himself what it was they clove to, what it was they desired. He who would be a philosopher must learn to feel with the philosophers, as well as think with them; and pass judgments of final preference with them. And here their errors are seldom to be dwelt upon; but the tone and color and flavor of their vision are a priceless heritage, a new glory that is given to all mankind.

H. T. COSTELLO.

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PURPOSE AS A CONSCIOUS CONCEPT

IN their repudiation of anthropomorphism as a method of explanation both scientists and philosophers agree. The significance of mechanism as explanation has been such a hard won and widely profitable achievement that any suggestion to curtail its application naturally arouses vigorous opposition. But that there may be advocated a method of procedure the converse of anthropomorphism, carrying in its train consequences which may be no less serious, appears to be not so generally recognized. That is, in contrast to psychomorphism (the modern refinement of the older anthropomorphism) physicomorphism (if I may be allowed to use the expression) is practised when physical concepts are applied to a realm where their employment is not so much superfluous for explanation as it is unintelligible. To extend mechanical description so as to include all activities of living beings is, I take it, an instance of this nature.

Professor Warren's study of purpose[1] with its point of departure in the analysis of conscious purpose affords a particularly valuable basis for the thesis I wish to elaborate in this paper. The biological approach to the discussion, while the fundamental conclusion is in general agreement with the position of Professor Warren, has proceeded (and naturally so) in the direction of proving that experimental evidence is favorable to the physiochemical conception of certain activities of living beings characterized as purposeful. The further implication is suggested that all organic activities may eventually be included under the same rubric. Here, psychological categories are assimilated to biological, purpose is one type of physicochemical description. In Professor Warren's discussion, on the other hand, it is a significant fact that the analysis of the conscious experi-

[1] *A Study of Purpose*, this JOURNAL, Vol. XIII. (1916).

ence comes first. Here the elimination of certain factors usually considered essential to conscious purpose is effected with the result that the biological processes are assimilated to the mental events. Now the argument I propose to develop in the following pages maintains that this elimination of any peculiar features of conscious experience and the assimilation which follows is made possible by a fundamental confusion in the distinction between the mental and the physical, a confusion bound up with the ambiguous use of certain terms employed in the description of conscious purpose. If the basal assumption concerning the relation of the mental and the physical rests upon their absolute existential disparateness, it may prove that the type of psychology which, while recognizing this distinction as relevant to one stage of explanation, advances to another level of interpretation of the diversity points the way to a dissolution of the confusion.

We proceed to the analysis of conscious purpose. Briefly, the final conclusion reached as the result of the examination of purposive experience is that anticipation and fitness are characteristics which distinguish this type of experience from other series of mental events. The illustration which serves to illustrate this fact is as follows: "I am reading and it grows dark. I think of turning on the electric light and without hesitation the action is performed." That is, psychologically, the series of events consists in the perception of darkness, the idea of light and the perception of light. The idea of turning on the light constitutes the forethought or the anticipatory experience. The analysis then procedes to affirm (and here we come upon the crucial point in the description) that the peculiarity of this experience, that which renders it purposive, is the fact that it embodies an inversion of the usual order of events. In general the representation or idea follows the perception; in this type of experience the idea precedes the perception. The point that I desire to advance here is that this statement gets its only possible meaning from an ambiguous use of the term idea or representation. The meaning of the term idea which can be involved in the statement that the idea generally follows the perception is relevant to *a specific perception,* a definite experience which for certain reasons is designated a perception. The representation is a representation of the specific experience to which it refers, a reproduction in the sense of lacking the characteristic of the perceptive factor, and this it is as a matter of definition. On the other hand the employment of the term idea in the description expressed in the statement, the idea or representation precedes the perception, involves a different significance. Manifestly it can not be solely a representation, a reproduction in the sense of being a replica embodying a definite previous

experience. In other words, idea here is not merely if at all a representation of what has happened. It consists of a prerepresentation and embodies an antecedent occurrence to just the extent that it contains elements which have been previously given in a perception. But, on the other hand, it can be characterized as anticipatory, as forethought, because it involves additional factors or qualities (whatever these may turn out to be) not discovered in the perceptive experience. It is representation plus a prospective element: the representation has reference to a future experience. In some manner this fact of future reference as embodied in the present experience must be taken into account since it is the pivotal point of the whole analytical description.

Let us revert to the instance given above in which the order of events was presented as, the perception of dark, the idea of light, the perception of light. Does analysis reveal these occurrences as a successive series, or does not a closer scrutiny disclose that finding more harmonious with the facts, which discovers perception of dark and idea of light to be simultaneous factors in a single complex?[2] Perception of dark is the experience of an absence of light, absence being a privation and therefore denoting something (in this case the darkness) to be removed or replaced by a different condition. It means the presence of the future light in the only sense in which it can be present without committing a contradiction in terms. Thus there is discovered a meaning in the statement, the future event influences a present. The future as future can not conceivably affect a present, but the future as a present future or idea is a conception which we may entertain.

Furthermore, if this forethought which marks the distinguishing trait of conscious purpose functions in a manner similar to the sensory element in all perception, and differs only in the fact that the prospective element is less definitely in consciousness in purposive experience, then conscious purpose is a special case of the purposiveness of all mental life. For example, I am walking along the street, I see a person advancing towards me from the opposite direction, I turn to the right to avoid a collision all the while continuing my conversation with the friend at my side, having performed this action with no obvious notion of so doing. In this case we have the element *to turn aside* bound up with the sensory patch of color, parallel to the forethought in the instance above, but differing from it in emphasis so that it is not apparent to immediate inspection. The perception itself involves elements which function in a manner similar to that of the forethought. That is, the sensory stimulus,

[2] John Dewey, *The Reflex Arc Concept in Psychology, The Psychological Review*, Vol. III. (1896).

the patch of color, involved the reference to the obstacle to be avoided, the turning aside, a possible future experience.

This suggests the consideration of an important point in connection with the description of a purposive experience. As noted above the typical order of events was designated as follows: perception, idea, perception, these distinctions being those of the psychologist or observer, and not those of the experiencing individual. These distinctions, accepted without question by the psychologist, with the assumption that they would be the utterance of the experiencing agent, could he articulate the events in such terms, permits the vibration between the two sets of categories pertaining to the physical and the mental respectively, and thereby results in the violation of the basal standpoint of the discussion. Thus if the individual's description which runs, it is dark, I must turn on the light, the light is here, should be rendered in general terms the series would be, first a physical fact (it is dark), second a mental event (the idea of turning on the light), and third a physical fact. That is, the first member of this order *is accepted as* a physical fact or more exactly a physical fact is there involved, and is not apprehended as a perception, if by perception is intended a mental event. The same thing may be said of the final perception which is characterized as fit. The psychologist differentiates perception and idea by the possession of a sensory datum in the former. This distinction involves a reference to a physiological condition, which can not be included in the account of the experiencing agent in so far as he is limited to the particular experience under consideration. That is, purporting to give a description of a series of events within the conscious realm, a distinction in the nature of these processes is made which involves, but does not explicitly recognize, an extramental factor.

To sum up the conclusion of this discussion of purposive consciousness, we find that, instead of revealing an inversion of causal order, anticipation gets its significance from the fact of a non-causal or non-mechanical description of events. This, we must recall, is the result of the analysis of our description of a subjective process; it is a matter of meaning and in no sense a proof derived through objective observation or experimental evidence concerned with physiological processes. This latter point brings us to the consideration of biological purpose.

We come now to the concept of purpose as applied to certain activities of living beings. I say certain activities advisedly, because it is in general only to specific types of organic activities and not to all vital processes that this category is ascribed. Professor Warren maintains that the distinguishing characteristics of such processes

are found in the phenomenon of anticipation followed by an activity which is designated as fit, this latter quality being a judgment of the observer and not a quality inherent in the process. For example, the animal seeking its prey actually begins the process of seizing and masticating before the food is possessed. The animal striving to get out of the cage and to obtain food prepares for that result by beginning some of the activities involved in eating before that process is operative. An activity of this sort is anticipatory in view of the later process for which it is a preparation. In other terms, it exhibits a reaction to a situation before the situation to which it is a response exists.

Now while it is asserted that such operations in terms of their own inherent qualities must be conceived as strictly mechanical or capable of adequate description in physiochemical terms,[3] according to Professor Warren they are purposive in so far as the mechanical process exhibits an order which is the reversal of the usual causal order.[4] Masticating generally takes place only when the food is in the mouth. Occurring before this event, it is a preparation for it. Now the point I wish to emphasize in this connection is that it is allowed that only from the point of view of the observer can the phenomenon of anticipation be said to exist. To repeat, the process viewed with respect to its own inherent qualities is physiochemical, mechanical, causal. We ask then, what is the significance of the introduction of the point of view of the observer? Is it a justifiable basis for the characterization of a process as purposeful with the applications derived from it? The conclusion I desire to advance, respecting this point, is that ultimately this reference to the observer resolves itself into the inclusion of the process which is being inspected under some more comprehensive situation. In the instance noted above, the masticating considered with reference to the actual possession of the food, the consumption of which makes for the well-being of the animal, is purposive. If this be granted, then the ground for designating the particular types of activities specified, as anticipatory, is removed. Any eating process in so far as it tends to the survival of the individual might be considered as preparatory to such

[3] We are not here concerned with such a conception as the entelechy of Driesch which superimposes an additional explanatory element upon the physical account.

[4] In asserting the fact of an inversion of the causal order such modifying phrases as, in a sense, of a type, so to speak, are frequently interpolated. The contention which follows ascribes to them a far more important function in obtaining the results reached by Professor Warren than appears to be assigned to them.

a result[5] provided our interest was concerned with that fact, and this is not admitted in the conception of purpose defended. That is, if we appreciate the reason for characterizing a stage of a physiological process as anticipatory with respect to the end term selected by the interest of the observer, then any earlier step of such a process may be viewed under given circumstances as preparatory to a particular result. That is, preparation for an end has no more significance than a sequence of before and after except as the observer selects a member of the series (arbitrarily as far as the series above is concerned) which he fixes as a result, even if his motive is grounded in a fact without the investigation. The procedure in such an explanation reduces to the setting up of limits to the domain of a problem, and then transcending those boundaries by enlarging the field to include data not relevant to the terms of the original problem. The physicochemical process described in terms of its own inherent qualities derives its term denoted as final from the interest of the observer (in this case, concerned with the survival of the individual), in the same manner as this process (the survival of the individual) gets its characterization from its relation to a more inclusive body of physical facts (an environment). Or, approaching the matter from a different angle, it might be said that neither of these processes owes its character to the point of view of the observer, if we consider that the human interest may be disregarded in the special problem as is the case in general scientific procedure. Considered from its effect upon survival of the individual, eating in general or breathing is just as much and just as little anticipatory as the initial mastication is to the catching of the prey. Thus, all such expressions as end of activity, result, prospective propensity, controlling propensity,[6] preferred or selected responses, employed by their various authors to denote the peculiarity of purposive organic processes, are simply so many diverse ways of denoting the relation of the particular activity under discussion to other more comprehensive processes and should be divested of any additional implication.

There is a conceivable meaning which could be attached to the characterization of an organic process as anticipatory (inherently so), and that is, in the event that a non-physical or mental element (such as a vague feeling in the case of the animal striving to get out

[5] The fact that intervening acts must occur before the end process, in relation to which the first member of the series is characterized as preparatory, in no way affects this statement.

[6] R. B. Perry, *Psychological Review*, January, 1918, p. 12. "It is essential that the action should be thus determined by its relation of prospective congruence with a controlling propensity which is both prior and more general."

of the cage, or a vague idea of the food resulting in the masticating before the prey is caught) determines any part of the activity, we should be obliged to assert then not a reversal of the causal order, but rather a non-causal sequence to the extent to which that factor entered into the determination of the process. I am not here contending for any such hypothesis; I merely desire to point out an intelligible conception of the expression, the response to a situation in advance of the existence of that situation. On any other basis such phrases as dissatisfaction and striving employed in connection with the description of what is held to be a series of physical events, even in the capacity of inefficacious correlates, have no significance nor excuse for being. Variability and selectiveness in response, conceptions taken over from mental life, are rendered unintelligible when made descriptive of strictly mechanical series. From the standpoint propounded there can be no variation of response; every reaction is as necessary as every other. Picturesqueness here tends toward confusion and does not assist in clarification.

If the above considerations concerning the significance of a description based upon the point of view of the observer hold, then the basis for assimilating organic purpose to conscious purpose disappears. There is no meaning in the reversal of a causal order if a physical explanation obtains. There is no place for a concept of preparation or anticipation employed in a sense which permits it to serve as a basis for agreement between the two divergent orders of events distinguished as mental and organic, the latter ultimately reducible to a special type of physical process. If the assumption of psychophysical parallelism proves not so clear and satisfactory in its developments as it may appear to be, is it inevitable that an hypothesis diverse from this necessarily retards the study of the brain and nervous system?[7]

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"DUALISM AND ANIMAL PSYCHOLOGY:" A REJOINDER

PROFESSOR WASHBURN'S reply to my recent article *Dualism in Animal Psychology* raises so clearly and insistently the fundamental issues in dispute between the dualist and the behaviorist, that a rejoinder seems imperative, the more so since my article failed to make clear in certain matters the real point of my criticism.

[7] E. B. Holt, *The Concept of Consciousness*, p. 308. "Now in attempting this deductive account of consciousness, I have had one prime purpose in view, and that is to free once and for all the study of the physiology of the brain and nervous system from its present and retarding association with metaphysics."

As I understand it, the issue is briefly this: Is psychology properly concerned with a class of phenomena (conscious processes) which are observable only by one person? Must therefore the psychological study of animals and of one's fellow-men rest, first, upon the argument from analogy, and, second, upon the capacity to reconstruct imaginatively the mental processes of the animals or human beings in question?

Behaviorism, as a scientific theory, and not a metaphysical doctrine, is not concerned with the question whether or not there be conscious processes which are hidden from all but one. Its contention is merely that if there be such processes they can not by the very nature of the case be objects of scientific study. For it is an essential condition of scientific investigation of any phenomenon that observations made by one individual shall be verifiable by others. Otherwise indeed a phenomena is not even identifiable. This was the point of my argument that psychological phenomena investigated experimentally "become in effect functions of the factors constituting the standardized conditions of the experiment." Professor Washburn's reply, that the dualist may admit this without affecting his claim that the phenomena are in themselves observable only by the subject, does not meet the real objection, namely, that it is only *as* functions of standardized conditions that they can become objects for science.

Suppose that the problem to be investigated is the determination of minimal changes in grays. The standardized conditions of the experiment include constant lighting, distance of observer from stimuli, time and order of observations, *etc.*, and finally, the use of standardized black and white paper. Let us admit with the dualist, for the sake of argument, that what the subject is observing is a visual sensation-quality which is private and incommunicable. The essential fact remains that the observations can only be described in such terms as: "observations of revolving discs of so many degrees black and so many degrees white," *etc.* Furthermore, earlier and later series of observations can be correlated with each other as observations of the "same" phenomena, only in so far as the phenomena are described in similar objective terms. In other words, the dualists' assumption of the private and incommunicable character of the phenomena under investigation is wholly inoperative for the scientific procedure in question. It affects neither method nor result. What is being investigated is the subjects' capacity for discriminating differences in objective stimuli.

The same point is involved in Professor Washburn's comment: "Nor would the dualist realize why Dr. de Laguna needed to occupy a page in showing that in actual procedure and in results

the studies of a dualist and of a behaviorist in the field of comparative psychology are identical. Since we can obtain no introspection from animals, such a statement would appear to be self-evident: it is the interpretation of results that differs for the two types of workers." But it is precisely the scientific value of such additional "interpretation" which is in dispute. My contention was that so far as *scientific* procedure and *scientific* results are concerned the dualist and the behaviorist are practically at one, and that "just in so far as the dualist claims to infer from the facts of behavior the existence of an inner order of being related in an inscrutable way to those facts, he is stepping outside the bounds of scientifically verifiable hypothesis and entering upon purely metaphysical speculation in the bad sense of the term." This contention, which to me seems the essential one, together with the charge that the dualists' "interpretation" involves, on Professor Washburn's own showing, an appeal to supernatural insight, has been entirely ignored in her reply.

The issue between the behaviorist and the dualist, upon which the whole controversy turns, is, I believe, the nature and status of introspection. It is here that the real strength of the dualist seems to me to lie, as is brought out in Professor Washburn's reply. It is so obvious on the one hand that there are things, like the pain in my tooth or the pressure on the back of my hand, that are directly observable by me and by no one else in the world, and with which psychology is clearly somehow concerned, that the position of the dualist seems inevitable. On the other hand, it is so obvious that the pain in my tooth and the pressure on my hand are not themselves modes of behavior, that the alleged proposal of the behaviorist so to classify them seems sheer perversity. If behaviorism is to be made a reasonable doctrine in the eyes of the dualist it must take account of these facts. Advocates of behaviorism have usually failed I think, to distinguish properly between the behavioristic status of such commonly recognized psychological phenomena as "sensation" on the one hand and "emotion" on the other. The claim that the study of emotion is a study of a type of behavior is plausible enough, but the claim that the study of sensation is a study of modes of behavior is open to obvious objections. "Red" is not a set of reactions in the body but a directly observable somewhat; so also are "pressure" and "pain." But to recognize this is by no means to accept dualism. It is quite open to behaviorists to admit the possibility of directly observing these phenomena, and of course many behaviorists, notably the neo-realists, have maintained this position most vigorously.

Let us admit this claim. Let us admit also that these and other

similar phenomena come within the field of psychology, or at least within the scope of introspection, in so far as they are directly observable by one person only. Psychological introspection is then to be distinguished from ordinary "objective" obervation just because it is the observation of that which is essentially private and incommunicable. To the all-important problem which is thus raised: how introspection, which is by definition a sort of observation unverifiable by others, can yet possess scientific value, the only solution I know is that offered by behaviorism, *viz.*, that introspection has such a value only in so far as the introspective observations of the subject are treated as *responses*, and not as statements of observed facts. In other words the introspections are data for the psychologist, as the flight of the bee is for the naturalist, digestion is for the physiologist, or the burning of coal for the chemist. This solution is, I believe, theoretically sound, and it accords moreover with the actual procedure of the experimentalist. The real scientific observer in the psychological experiment is not the *O* but the *E* of the experiment. The series of introspections is a series of responses given by the *O* under the conditions of the experiment, and observed and interpreted by the *E*.

That introspection is a peculiar type of response which needs careful analysis in order to distinguish it properly from other types of response is of course true. I must frankly admit that no behavioristic discussion of it which I have yet seen seems at all adequate. But I do believe that behaviorism offers the only promising theoretical basis for a fruitful analysis of the nature and limits of introspection.

It remains to say a few words in reply to Professor Washburn's question as to the possibility of a non-mechanistic behaviorism. The problem is of course far too large a one to be properly discussed within the limits of this rejoinder. It would seem, however, that it is the assumption of the possibility of a mechanistic behaviorism, *i. e.*, an exhaustive description and explanation of the phenomena of human and animal behavior in terms of physical science, which, in view of the actual achievements of biological science is in need of justification. But however that may be, the terms in which behavior is actually describable to-day are very far from being exclusively physical, or even physiological. The claim that physical or physiological terms are the only ones in which an objectively valid description of behavior can be given, would appear to me, I confess, nothing short of metaphysical dogmatism, and for this reason I doubt whether I have rightly understood Professor Washburn's position. When she writes: "Dr. de Laguna seems to mean . . . that there exists a form of behavior which is not either nervous action or mus-

cular action. I can not guess what behavior, so interpreted, is," my doubt increases. Professor Washburn here ignores a distinction which to me appears of cardinal importance, that between physiological process on the one hand, and behavior on the other. Of course in one sense there is no behavior that is not nervous or muscular action, just as, for example, there is no digestion that is not chemical action. The physiologist classifies a given process as "a digestive process" not on the basis of its chemical character, but because it bears a certain type of relationship to other processes making up the life cycle of the organism in question. The same chemical process occurring in a different organism might not be a digestive process at all because it would not occupy an analogous place in the life cycle of that organism. If we compared the digestive processes of a jellyfish and a rat we might conceivably find no chemical identities at all. Physiology, in short, is primarily the analysis of the internal bodily processes with reference to the fact that they constitute a vital economy. It is the exhibition of a schema, a type of systematic relationship. The schema once made out, the detailed investigation of how, in each distinct species, the various processes actually play their parts in the schema, depends on the use of chemistry and physics. But the use of chemical and physical categories is distinctly subsidiary, albeit indispensable, to the actual procedure of physiology.

In a perfectly analogous way the use of physiological categories (as well as those of physics and chemistry) is subsidiary, albeit indispensable, to the procedure of the behaviorist. For the external behavior of the living being also constitutes a life cycle, an economy analyzable into different factors from those found by the physiologist. A certain response is classed as "play," or a "fear response," not because it consists of certain specific muscular contractions or nervous processes, but because in the individual in which it occurs it occupies a specific place in the larger vital economy which constitutes his behavior. The task of the behaviorist, as I conceive it, is primarily, like that of the physiologist, the exhibition of the complex activities of the living being as a systematic economy. The schema which the behaviorist has to exhibit is vastly more complex than that of the physiologist, since the relationships constitutive of the factors of the schema include relationships with factors of the environment, not exceptionally as in the case of physiology, but essentially and systematically. Moreover such factors in the environment are themselves factors in the schema of behavior. It is for this reason that the economy which the behaviorist has to investigate forms the subject matter of a distinctive science—psychology.

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REVIEWS AND ABSTRACTS OF LITERATURE

Traité de Logique. E. GOBLOT. Paris: Librairie Armand Colin. 1918. Pp. xxiii + 412.

Important logic books are usually distinguished as falling into one of two main classes. Either they interpret, with a sympathy which amounts to acceptance, the traditional or "formal" logic, or, leaving traditional logic almost wholly on one side, they give us a new theory of the work and characteristic standards of thought—usually in such a way that "logic" and "theory of knowledge" tend to lose their distinguishing outlines and coincide. As an example of the first class, we have the work of writers like Mr. H. W. B. Joseph, and as examples of the second, the work of men like Sigwart, Bradley, Bosanquet and Wundt, and of movements such as we find exemplified in pragmatism and neo-realism.

Professor Goblot's treatise is difficult to classify. He does not range himself clearly with some definite group of thinkers with whom he finds himself in sympathy, and then devote his energies to carrying on the work of that group. Indeed, the work of the various philosophical groups, and even the main tendencies of his fellow-workers in logical study seem to leave him indifferent.[1] Perhaps it would be more just to say that he is so much interested in developing his own thought, that he leaves to others the question of making comparisons with the thought of other logicians.

One characteristic of the book must be admitted at once—its originality. The charming preface of Emile Boutroux is hardly needed to inform the reader that his former pupil has worked his own way to his own conclusions, and that the study of scientific method, especially as exemplified in mathematics, has been especially influential in forming his thought. The detailed treatment of the concept as a "virtual judgment," the theory of deduction as quasi-mathematical, the theory of teleological induction with its mindless purposefulness—these and many other theories bear the undeniable stamp of the author's discovery. Indeed, there is hardly a page in the book but reads like a genuine discovery, and it may fairly be confessed that the chief characteristic of Goblot's work is its originality.

[1] For example, the idealist and neo-realist schools are hardly mentioned, even by implication. Pragmatism *is* mentioned, but in a perfectly external way. The "Logic of Relations" is discussed briefly, in reference to a criticism of Lachelier. Lotze, Bradley, Bosanquet, Wundt, Erdmann, Dewey, and their characteristic doctrines, escape all mention. Sigwart is mentioned once, but only in order to support a negative criticism of a theory traditionally ascribed to Kant.

Originality—yes. But are these discoveries *new*? Does Goblot add anything to what we have already learnt from other recent writers? Let us consider. The rôle of intelligence is said to be to substitute art for nature, and we are explicitly informed (§ 2) that one of the novelties of the book consists in regarding "substitution of the imperative for the indicative" as the essence of reasoning. When, however, we read the chapter in which this view is further developed (chapter XVII., on value-judgments), we learn that intelligence finds means to ends, but the ends are indemonstrables, arising out of the depths of our nature with the force of an imperative. But this is in essence nothing more or less than our old friend, the practical syllogism of Aristotle, tricked out in modern guise.

Again, in dealing with the theoretical syllogism, we are told that, while the "categorical" syllogisms of Aristotle do not advance thought, a kind of syllogism for the discovery, or at least elaboration, of which Goblot claims credit—the "hypothetical" syllogism—does advance thought. The detail of hypothetical syllogisms is worked out so as to correspond to the details of *Barbara, Celarent, etc.*,[2] and is certainly new. But the principle involved is surely not in any sense new. Its discovery, in acceptable form, is usually associated with the name of Sigwart, if not of Lotze, and it has long ago become an integral portion of modern logic. Indeed, in principle, the standpoint taken by Goblot's treatise has already been passed. For since the work of Bradley and Bosanquet has familiarized us with the view that all thought is both categorical and hypothetical—categorical so far as sensory, and hypothetical so far as intellectual—Goblot's sharp opposition of the concepts "categorical" and "hypothetical" as applied to inference has lost much of its point. In spite, then, of genuine originality,[3] Goblot has here failed to reach the front-line trenches of present-day logical advance.

A third discovery, in the light of Goblot's own studies of mathematical method, is that thought is essentially synthetic. The essence of mathematical inference, for example, consists in the "construction." But surely this has been a philosophical commonplace since the time of Kant, and for a student familiar with the work of Lotze

[2] Goblot follows Lachelier in refusing to recognize a fourth figure. He also identifies the negative moods of the first two figures. *Datisi* and *Disamis* are also identified.

[3] By "originality," it is meant that Goblot makes his own discoveries, whether by discovering for himself *paths already known* to others, or whether by discovering *new paths* which lead to known conclusions. It is not meant that the *conclusions* are unknown. Sometimes this happens to be the case, and then Goblot's thought is not only original, but also discovers something which his colleagues would regard as new.

and Sigwart—to mention no others—contains nothing which could be called new. Indeed, since Bradley's demonstration of the interconnection of analysis and synthesis, and especially since the very thorough treatment which the constructive work of thought has received at the hands of almost all modern logicians, it is hardly too much to say that Goblot's discoveries in this field, though undoubtedly original—*i. e.*, made by himself—are almost naïve. He writes as though "formal" logic in its older form still held the field and needed to be routed.

In a number of points, then, which are of fundamental importance, the book presents us with little which can fairly be called new. It remains to discuss one other point, which—at least at first sight—seems more promising. This is the treatment of "teleological inference." Stated briefly, his view is as follows: Baconian logic studies causal laws. But there are various types of causal laws, and the time has come to make an advance upon the logic of Bacon and Mill. Causation in the usual sense is regarded as a continuous chain without beginning or end, but there is one type of causal series which is more than this. Certain series have, even as processes *in rerum natura*, a beginning and an end, and scientists employ specialized tests for dealing with such special causal series. Examples are to be found, *e. g.*, in physiology, in such cases as the creation of an organ by a function. Some initial stimulus sets in motion processes which come to an end when an appropriate organ has come into being. There is in such cases a purposefulness on the part of nature, and it is exemplified in many biological phenomena, such as natural selection, adaptation, *etc.* This purposefulness is, of course, unconscious, and the conscious purposefulness with which, *e. g.*, human beings adapt themselves to concrete situations, should not be regarded as the exercise of a "free" will—whatever that might mean—but simply as a more complex form of this fundamental biological purposefulness. Just as the logic of Bacon and Mill provides canons for establishing laws of causality, so the new teleological logic should provide special canons for testing and, where possible, establishing the special kind of causality which is purposeful. Purpose and causality are thus not rigidly opposed to one another, but what we call purpose is simply a specialized kind of causality, and its study should be recognized as legitimately belonging to the sphere of a rigidly empirical science.

That this view is largely "original," there is no reason to doubt; and as applied in this way to logic, it is also largely new. But in itself the theory is not entirely novel. The view that disturbance of the equilibrium of an organism leads gradually to the recovery of

a new equilibrium, is well known in biology, and has been very fully worked out in psychology.[4] In Goblot's treatise, the comparison with the "inductive logic of Bacon and Mill" is certainly suggestive, but his treatment is thin and sketchy, and leaves us with a mere outline.

So much for the major points. Minor points are treated in the same kind of way. That is to say, the discussion is almost always suggestive, and occasionally seems illuminating, but further reflection produces doubt as to whether the reader has really learnt anything which could be called *new*. Thus the treatment of the "indemonstrables" as essentially admitting of alternatives from a strictly theoretical viewpoint is admirably clear and illuminating, and seems highly original—but in principle is thoroughly familiar to every student of the Kantian "antinomies." The treatment of definition seems fresh and original. The treatment of classification seems original, indeed, but poor, and produces no accession of insight. The student of Wundt already knows more about classification than Goblot can tell him, and in the case of definition, he is left wondering whether the chief function of definition is, after all, to substitute a clear for an obscure conception. He also wonders whether Goblot really believes that such an entity as an "initial" definition—a modern version of the Aristotelian "essence"—is really attainable by man.

Apart from questions of content, the book is written very unevenly. Certain chapters—especially in the more "formal" part—are so much condensed as to be at times obscure. In a few sections it is even necessary to take pencil and paper, and work one's way through the various statements as if they were so many unfamiliar algebraical examples. In other chapters—especially chapters XIV.–XVII.—the treatment is so loose and sketchy, that one is surprised to see them published in what is professedly a systematic treatise[5] on logic.

Partly for this reason, and partly for others, it is far from clear for what class of readers the book is intended. Certain portions—*e. g.*, the first part of chapter XVIII., and a number of the simpler historical explanations, such as the characterizations of Aristotelian and Baconian logic—might be read by the veriest beginners. Other portions—*e. g.*, most of the closer reasoning in chapters III.–X.—might be worked through with profit by the average college graduate in this country. But few students would be able to appreciate

[4] By G. F. Stout, in his *Analytic Psychology*.

[5] The preface, written by Boutroux, explains the thread of connection here, but it remains true that the connection is to be found in the preface, rather than in the chapters in question.

the later chapters (XIV.–XVII.), and in any case the reader's judgment would be much exercised in deciding what he ought to label as "Goblot's view" and what, on the other hand, he might safely regard as authoritative. For example, the reader is told that judgments of difference are affirmative, and judgments of identity are negative in character, and there is not the slightest hint that a consensus of logical opinion takes the opposite view. He is also informed that no *logical* arguments have ever been brought against Hamilton's doctrine of the quantification of the predicate, and that, in fact, the doctrine is acceptable.[6] It is further stated that the procedure of mathematics is typically *de*ductive, and there is not the slightest hint that other authorities—such as Wundt, and even writers of elementary manuals, such as S. H. Mellone—regard it as largely *in*ductive, and that, in fact, modern logicians generally regard induction and deduction as two complementary aspects of one and the same type of logical thought. His own distinction amounts to stating that induction contains an explicit reference to sensory experience, whereas in deduction such a reference is only implicit. The distinction is not, however, very clearly brought out. From these illustrations, it should be sufficiently evident that the book is scarcely to be regarded as containing information which the would-be student of modern logic could implicitly accept.

The principle underlying the above criticism is simple. It is not urged that Goblot's contentions are not frequently valuable and true. The sole objection made to his work is that it is too individualistic, and that not enough account is taken of the great modern logicians whose theories are universally recognized as holding the field. He can not be said to align himself with any well-defined philosophical tendency, and his work accordingly lacks a thoroughgoing unity. Three tendencies are prominent, but none of them is carried through. (1) There is a sociological attitude present in the introduction, in the second chapter, and again in the fourteenth chapter—*i. e.*, a tendency to regard logic as arising in answer to social problems. Along with this goes a tendency to regard truth with its claim to necessity, as a social convention or agreement which approximates to a human universality. But this is not worked out in detail, and the epistemological problems to which it gives rise are not definitely faced. (2) There is also a psychological tendency.

[6] The common lecture-room criticism is that the doctrine leads to "identical judgments" or tautologies. "Some negroes are men," *e. g.*, becomes, when fully determined, "Some negro-men are some negro-men." Other *logical* criticisms in the literature are to be found, *e. g.*, in Erdman's *Logik*, 2d edit., pp. 352 ff.; W. Nedich in Wundt's *Philosophische Studien*, III., pp. 157 ff.; Welton's *Manual of Logic*, I., pp. 200 ff.; Joseph's *Introduction to Logic*, pp. 198 ff., *etc.*

Logic is regarded as belonging to the "psychology of intelligence," on the ground that the belief that a statement is *true* influences our actions. With this is connected the "substitution of the imperative for the indicative" mentioned above, and a tendency to regard ideals as ultimately psycho-physical. He maintains, *e. g.*, like Hobbes and Spinoza, that a thing is *good* because we want it, and not that a reasonable person should want it because after rational deliberation he decides that it is "good." This psychological tendency, however, is almost entirely without influence upon the main body of the work (chapters III.–XI.). (3) Finally there is the interest in a "teleological" logic, to which reference has already been made; but this also is hardly worked out in detail. We are thus left with the conviction that the book is little more than a collection of detailed attempts to deal piecemeal with groups of problems usually regarded as falling within the province of logic, but that the treatment is neither in a line with recent work on the subject, nor in itself perfectly unitary and consistent. On many detailed questions his conscientious and careful study often results in a satisfactory clearness, but, taken as a whole, the book is disappointing. No large and clear-cut aim has been achieved.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. January-February, 1919. *Les fatigues sociales et l'antipathie* (pp. 1–71): DR. PIERRE JANET. – A study of the social conduct of the nevropath. *Claude Bernard et l'esprit expérimental* (pp. 72–101): RAYMOND LENOIR. – The methodological and philosophical conceptions governing the work of Claude Bernard form a protest of lasting value to the extremes of positivism, and illustrate the persistence of the French philosophical tradition that philosophy is reflection on science. *L'ère de l'ingénieur pénal* (pp. 102–130): ALBERT LECLÈRE. – Contains a discussion of the relation of criminality and insanity, and a programme of work for the "penal engineer." *Etude Critique. La logique de M. Goblot:* ANDRÉ LALANDE. *Analyses et Comptes rendus.* Ed. Abramowski, *Le subconscient normal:* DR. JEAN PHILLIPE. Francesco de Sarlo, *Psicologia e filosofia:* FR. P. Hartley Burr Alexander, *Liberty and Democracy:* LUCIEN ARRÉAT. *Revue des Périodiques. Nécrologie:* M. GASTON MILHAUD.

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Higier, Heinrich. Vegetative Neurology: The anatomy, physiology, pharmacodynamics and pathology of the sympathetic and autonomic nervous systems. Translated by Walter Max Kraus. New York and Washington: Nervous and Mental Disease Publishing Company. 1919. Pp. vii + 144. $2.50.

Miner, James Burt. Deficiency and Delinquency: an interpretation of mental testing. Educational Psychology Monograph No. 21. Baltimore: Warwick & York. 1918. Pp. xiv + 355. $2.25.

Reely, Mary Katharine, editor. The Book Review Digest. Volume XIV., Reviews of 1918 books. New York: H. W. Wilson Co. 1919.

Richardson, Roy Franklin. The Psychology and Pedagogy of Anger. Educational Psychology Monograph No. 19. Baltimore: Warwick & York. 1918. Pp. 100. $1.25.

NOTES AND NEWS

ATTENTION is called to the "Report of the Psychology Committee of the National Research Council" by Professor Robert M. Yerkes, printed in the *Psychological Review* for March, 1919. It is a detailed account of the technical assistance given by psychologists to various branches of the service. The following paragraphs are from the end of the article:

"The eager and effective cooperation of psychologists in professional war work has enabled the Psychology Committee to win the confidence and the hearty support of the several scientific groups which together constitute the Research Council. Largely because of the way in which it responded to the practical demands and the opportunities of the military emergency, psychology to-day occupies a place among the natural sciences which is newly achieved, eminently

desirable, and highly gratifying to the profession. An immediate result of this improved status is the desire of the Executive Board of the Research Council to have psychology adequately represented in the permanent national organization."

"It is proposed to associate psychology with anthropology in a Division whose chairman and vice-chairman shall be chosen alternately from the two sciences, a chairman from anthropology serving with a psychologist as vice-chairman and *vice versa*.

"If psychology is to meet successfully the now rapidly increasing practical demands by which it is challenged, it must organize for cooperative endeavor in a way not thought of prior to the war. On the one hand is the imperative need of highly developed and specialized methods; on the other, the need for largely increased and adequately trained personnel. The war activities of the Psychology Committee have revealed or created opportunities whose scientific and practical significance can not be estimated. Two years ago mental engineering was the dream of a few visionaries. To-day it is a branch of technology, which, although created by the war, is evidently to be perpetuated and fostered by education and industry.

"Psychology needs therefore as never before in its history intimate associations with the more exact natural sciences, as well as with the biological sciences which are more nearly related to it. The support and cooperation of other scientists and especially their intelligent interest, are indispensable.

"For the speedy and sound development of psychology as science and as technology, the National Research Council should prove the most important of agencies. It is earnestly to be desired that the psychologists of the country may unite in their support of this national organization for the promotion of scientific research, its practical applications, and the profitable relations of sciences and of scientists."

CHARLES W. HENDEL, JR., Ph.D. (Princeton), has been appointed instructor in philosophy at Williams College.

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